

SOCIÉTÉ DES EAUX DE VOLVIC

➤ **SECTOR WATER**
 SOCIÉTÉ DES EAUX DE VOLVIC SA
 Volvic, France
 www.danone.com

➤ Integrated system ECOBLOC® 4-14-4 HC EV ERGON



VIDEO

GEO LOCATION

Nature is powerful and generous, and reflects the image of its beauty in the environment that surrounds it. In the heart of the Regional National Park of the Volcanoes of Auvergne, the biggest, regional, natural park in France, and also one of the oldest, the beauty of nature is reflected in the breathtaking environment, which has seen uncountable volcanic eruptions and even today has many volcanoes, lakes, rivers, flora and fauna that fascinate nature lovers. From this pure, preserved environment, rich with minerals and nourishing substances, springs a source of rare, low mineralised water with a unique taste: the source of the natural, mineral water Volvic. When we speak about purity and quality, it is the accurate work carried out by the bottling company, the Societé des Eaux de Volvic part of the Danone group, that comes to mind. The whole bottling process undergoes careful controls, to satisfy the high levels of quality required by the company, and by Danone, starting from protecting the source, to monitoring the natural environment, until the moment when the bottled product is consumed. All of this is taken care of in minute detail, involving partners and suppliers, as with the recent investment for the purchase of a new bottling line, for 8L containers in 100% recycled plastic (rPET), which involved SMI for the supply of an integrated system ECOBLOC® ERGON. The project is the result of strong synergy between Volvic-Danone and SMI, starting from the design phase, every choice rotated around the necessity to obtain higher than average, bottle performance and quality, safeguarding the final product, eco-sustainability and operational efficiency of the whole production process.



FROM THE SOURCE TO THE TABLE: THE QUALITY IS ALWAYS CONTROLLED

Sustainable development, respect for the environment, product quality and purity, are the fundamental elements at Société des Eaux de Volvic SA, company, which has been part of the French Danone food and beverage group (water dept.) since 1992. The natural purity and unequalled quality of Volvic water, begins by carefully protecting the source and accurately monitoring the natural environment from where this precious liquid flows. The water is conducted through stainless steel pipes from the source to the bottling plant, without any external contact, therefore from the depth of the volcanic stratum, it

reaches the protected environment of the inside of a bottle. To protect the liquid from any external contamination the Volvic bottling plant was designed according to advanced automation and security criteria, to respect this, the French company decided to choose the integrated system ECOBLOC® ERGON, supplied by SMI. The bottle has the fundamental role of maintaining the purity of the spring water and preserving the quality until the product is consumed, for this reason, the bottles blown, filled and capped by the integrated system ECOBLOC® ERGON need to go through a long series of



controls within the bottling line and, every day the Volvic Quality laboratory collects samples and carries out careful tests.

➔ **THE PROPERTIES OF VOLVIC WATER**

The heart of the utility basin of Volvic water is Auvergne, in the south central France, in the area of Massif Central, an exceptional natural environment with a unique geological history. As the name "Volvic" says, the source of the water comes from a volcano, and to be more precise it comes from a volcano nearby, Puy de la Nugère which with an altitude of 1,000m overlooks the ancient, surrounding valley. Rainwater has filtered for about 5 years into the layers of volcanic rocks that represent a great natural filter. Coming into contact with these millenary rocks naturally protected by any pollution, water is purified, is enriched by precious mineral elements and thus acquires its oligomineral, constant and unique composition. Volvic natural mineral water is a slightly mineralized water, can be drunk by everyone every day and is suitable for all organisms, even for the more fragile ones.



100% RPET BOTTLES

Volvic natural, mineral water, arrives at the consumers' table as pure as when it flows from the source, it is not treated in any way that can alter the taste, for this reason the container plays a vital role towards maintaining the purity of the water, from the source to when it is consumed. The most widely used material for bottling water is PET (polyethylene terephthalate), an unbreakable, plastic material that is lightweight and 100% recyclable. Volvic's high regard of environmental issues led the French company to develop modern solutions for the recycling of PET, so that a new bottle can be produced from an old one. Volvic was one of the first companies to use recycled plastic (rPET) to produce containers, slowly increasing the percentage of



rPET, until it hit 100% with the new 8 litre bottle. The 8L container with a square base, in the same style as the smaller Volvic bottles, was studied by a designer at Danone to create an extremely, practical, home use, container-dispenser. Its shape, part of which is slightly tilted, ensures that the bottle can be easily positioned on a flat surface and, thanks to the special cap which is used as a tap, the supply of the product is convenient and easy. The new design of the maxi container was accurately reproduced by SMI, to create the moulds that are installed on the integrated system, ECOBLOC® ERGON HC EV and which, allows it to produce a harmonious bottle with a clean design, that perfectly mirrors the purity of the water that it contains.

→ ECO-PACKAGING AND ECO-FORMATS

Volvic and the whole Danone Group are constantly involved in environmental protection and they play an important part in the management and safeguarding of the subsoil waters, and also in the promotion of recycling plastic containers.

Eco-packaging and eco-formats are concepts that have always been a part of Volvic, which was one of the first companies to:

- introduce PET for bottling water
- use recycled plastic materials (rPET) to produce bottles
- introduce plastic that has in part vegetable origin, in France
- reduce the weight of the packaging

Recognisable by the green cap, Volvic 0.5 L and 1.5 L bottles were the first in France, to be produced with a type of plastic that is 20% vegetable origin, favouring the use of renewable materials. Furthermore, as large capacity formats use less plastic, Volvic has always tried to promote them and produce ecological formats, like the 8L bottle, bottled by the ECOBLOC® ERGON HC EV recently supplied by SMI.



→ FIND YOUR VOLCANO

The Societé des Eaux de Volvic has always promoted the initiative and enterprising spirit of the people, believing that there is a volcano inside every person, symbol of interior strength, waiting to be awoken to gain what we desire. The French company believes that life is a question of choice, not of luck, the choice is the strength inside each one of us, the ability to reach the top of the world and, just like a volcano, every human being has an interior strength that needs to be awoken. Through a range of simple, natural products, Volvic helps consumers choose healthy eating habits, that are able to feed the interior strength within us:

- drink natural water having fun, with initiatives that are dedicated especially to young children
- improve access to clean water in Africa, by collaborating with UNICEF since 2006
- reduce sugar content in beverages

→ VOLVIC VOLCANIC EXPERIENCE - VVX

Volvic Volcanic Experience (VVX) began in 2017, with the aim of letting this volcanic region of Volvic be discovered under every aspect: sport, culture and music. Uniting the values of uniqueness, quality, conviviality and environmental responsibility, the VVX was designed to dazzle thousands of participants, with the beauty of the exceptional frame of Chaîne des Puys and to give them a unique adventure that joins sport, culture and celebrations. An exciting path for Volvic, that highlights the way the company is dedicated to sport, health and nature.



SMI SOLUTIONS FOR SOCIÉTÉ DES EAUX DE VOLVIC



To satisfy market request for bottled water, in 100% recycled PET (rPET) containers, the French company invested in the purchase of machinery from the ECOBLOC® ERGON HC EV range, supplied by SMI, the ideal solution to produce, fill and cap large size containers. The new investment was studied in detail, creating strong teamwork between the experts at Volvic and Danone and the designers at SMI. The complete, production process was designed so that every step of the bottling is kept under constant control, because it is here, that the water coming from the deep underground, comes into contact with the external environment and is at a greater risk of contamination which would compromise the sensory, chemical, physical and microbiological properties. The Société des Eaux de Volvic SA, also, pays particular attention to everything that concerns sustainable development, environmental respect, product quality and purity, for this reason the whole bottling, packaging and distribution process was designed around these values and the machine supplied by SMI was integrated with sophisticated inspection systems, which, starting with the preforms, carry out a long series of checks to maintain the quality and purity of the spring water.

➔ INTEGRATED SYSTEM ECOBLOC® ERGON 4-14-4 HC EV

Functions: stretch-blowing, filling and capping of square based, 8L containers in PET, for Volvic natural mineral water, with a production capacity of up to 3,200 bottles/hour.

Main advantages:

- compact, flexible solution for stretch-blowing, filling and capping bottles in PET, with the advantage, in terms of reducing production costs, as the system does not need a rinser, nor conveyors between the blower and the filler or accumulation
- isolating system between the "dry" area of the blower and the "wet" one of the filler, through a jet of high pressured, sterile air in excess of 5Pa, which guarantees a clean, hygienic filling system. The air flow, through 4 units of Galvani filters (HEPA filters) situated on the top part of the filler area, spreads around all the interested area to avoid contamination, acting as a "clean room". In addition, the filling valve is controlled by an electronic flowmeter
- application of various accessories to guarantee that the filling system is extremely clean and easy to sanitise with advanced cleaning systems
- innovative preform suction system, situated on the oven infeed star, to remove any tiny impurities that could be on the inside of the preform itself. The air that is inserted into the suction system is filtered, and is part of the air recovery system that comes as standard on all the range of SMI stretch-blow moulders.
- The system combines blowing air into the preforms with the following vacuum suction process
- machine integrated with sophisticated inspection systems with cameras to guarantee the quality of the bottled water, monitor the production process and avoid particles and/or impurities being deposited on the inside of the unblown preforms
- the preforms are blown with sterile air in a sterile environment; this sterility is maintained for all the process of filling and capping
- precise and fast operation, thanks to the electronic, operation control, to motorised stretch rods and the use of high efficiency valves with flowmeters
- reduced energy consumption: the stretch-blow module is equipped with a double stage air recovery system, which allows the reduction of energy costs tied to the production of high pressure compressed air
- high energy efficiency, thanks to IR lamps fitted onto the preform heating module
- filler area compatible with COP (Cleaning Out of Place) and equipped with optional system of stainless steel bulkheads to separate the "wet" area of the filler with the "dry" area of the blower during maintenance or cleaning operations. The bulkheads can easily be installed on the filler infeed, with a star on the blower that can be disassembled, and on the outfeed, on the channel of the bottle outfeed
- electronic components positioned on the inside of the panels to make sure they have greater protection from the damp
- base of the filler area is made in stainless steel and slightly sloped to ensure that any spilt liquids go down the drains
- electronic capper equipped with cap orienting during application, system to control correct positioning of cap and a rejection system for over turned caps
- cap sterilisation through jets of ionised air on the cap channel
- washable cap accumulation table, in stainless steel, equipped with an optional system to suction the caps to remove any impurities that might have deposited on them while moving along the hopper
- reduced maintenance and running costs of the machine



PRESSCO INSPECTION SYSTEMS

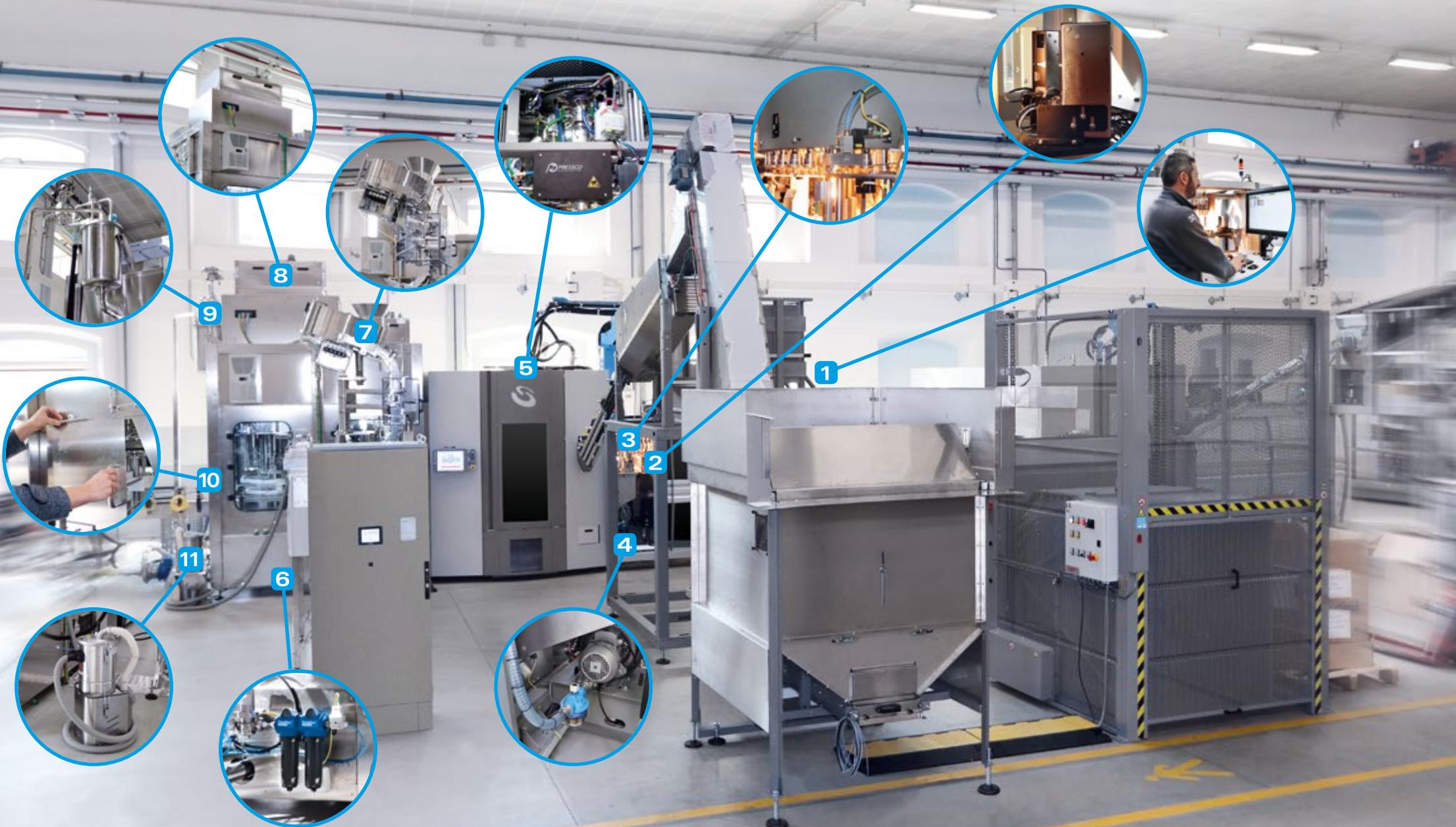
INTEGRATED INTO THE STRETCH-BLOW MODULE

The increase in production speed of bottling lines, the use of lighter containers, and the change in laws that are stricter in terms of food product quality and integrity force companies in this sector to use cutting edge technology

equipped with advanced inspection systems for preforms, bottles and caps, this way preventing any non-compliance issue or contamination. To satisfy the quality standards of the Danone group, the ECOBLOC® HC ERGON supplied by

SMI, is equipped with sophisticated Pressco inspection systems, leader in the inspection sector for containers in PET and reference point for all the companies which, like Volvic aim at having excellent quality standards.

- 1 PRESSCO CONTROL PANEL
- 2 PREFORM INSPECTION CAMERA
- 3 PREFORM DUST SUCTION SYSTEM
- 4 PREFORM DUST VACUUM SUCTION SYSTEM
- 5 BOTTLE MOUTH INSPECTION CAMERA
- 6 STERILE AIR FILTERS ON FILLER
- 7 CENTRIFUGE TO TURN AND FEED CAPS
- 8 STERILE BLOWN AIR FILTER ON FILLER
- 9 PRODUCT INFEEED TANK ON FILLER
- 10 BULKHEADS ON FILLER OUTFEED FOR WASHING WITH FOAM
- 11 CAP DUST SUCTION SYSTEM



➤ PREFORM INSPECTION SYSTEM

Function: verify that no particles and/or impurities are present in the preform

Advantages:

- avoid particles, stains and/or impurities inside the preform, to maintain the quality of the bottled water
- inspection system using three cameras installed inside the oven to check the colour of the preform, the presence of micro-holes in it or any scratch, physical or cosmetic deformation
- If non-compliant preforms are found they are immediately ejected from the production process, avoiding the next production steps, if these defective preforms were blown, it would be a waste of the bottles, generating expensive damage to plant efficiency
- The inspection system installed on the Volvic ECOBLOC® HC allows the complete preform check in all the critical areas and ejects the defective ones in the very first stages of the bottling process

➤ BOTTLE INSPECTION SYSTEM

Function: verify the integrity and quality of the mouth of the blown bottle

Advantages:

- system fitted on the blower outfeed star, giving the advantage of inspecting the internal edge and the outside of the mouth of the freshly blown bottle identifying any small breaks or abrasions
- allows defective bottles to be ejected so that only bottles that are up to standard will be filled and capped correctly
- avoids problems with cap application, as it ejects containers with defective mouths before they get to the filling and capping stages
- inspection system equipped with its own operation control panel, that interacts with the POSYC® control system installed on the machine for an improved, more complete analysis of the functional parameters. In this way the blower POSYC® can manage every process on the ECOBLOC® machinery: preform infeed, oven, stretch-blowing, filler, cap infeed, capper and all the optional devices for inspections and controls
- the integration of this inspection system inside the blower is advantageous as it allows constant monitoring of the process and the immediate ejection of any defective containers to produce high quality bottles at a reduced cost

THE SECOND LIFE OF PACKAGING IN A CIRCULAR ECONOMY

Designed especially to give families the possibility to enjoy the unique, precious, Volvic mineral water, in a way that respects the environment, the new 8L eco-bottle was created in 100% recycled plastic (rPET) and is 100% recyclable! It is the first totally recyclable container launched on the market. For Danone, the future of plastic bottles in the beverage industry will move towards rPET and therefore, it is betting on this material. In fact, the water division of the French multinational is a great user of plastic bottles for its products under the Evian, Volvic, Badoit and Salvétat brands, and it is already thinking about bottling them in rPET made from 100% recycled plastic. The bottle created by the ECOBLOC® ERGON



HC EV, supplied by SMI, will be the first 100% rPET water container on sale in France, seeing that 8L containers have already captured 10% of brand value sales, and with an important growth of 13,1% in 2018, the success of the new totally, recyclable format is guaranteed. Creating an 8L PET container in 100% rPET is the result of joint work between the specialists at Danone and at SMI. SMI provided the French technicians with one of their own stretch-blowers, so that they could carry out a series of blowing tests while accurately testing the preforms and bottles, these tests allowed them to regulate the “top load” resistance and the material distribution, a step at a time, developing a specially made preform with a specific shape. The biggest challenge, when using recycled preforms, is to guarantee the constant resistance of the bottle when it is being blown, this operation is very difficult with preforms made from recycled material.



THE DANONE GROUP AND THE WATER MARKET

The French multinational Danone, is a world leader in four sectors: essential dairy and plant based products, early life nutrition, medical nutrition and water. It closed its 2018 financial report with an overall turnover of 24.7 billion euro and over 100,000 employees around the world. In 2018, the Danone group had a turnover of around 4.6 billion euro in the bottled water sector (19% of the company’s overall turnover), with a net sales growth of 5.3% compared to 2017. The three countries that mostly contribute to the turnover of packed water are in this order China, Indonesia and France.

➤ THE HISTORY OF VOLVIC

The term “Volvic” derives from the Latin expression “Volcani Vicus” (Land of volcanoes) and from ancient times it was used by the Romans for this area. The richness of Volvic water was already well-known at the end of the nineteenth century, but it was only in 1927, thanks to the mayor of the town of Volvic, Pierre Moity, that the important source of water was discovered and a 700m tunnel was built underground to reach it. The water began to be sold in 1938 by a local company, which in 1955 took the name of Société des Eaux de Volvic, in 1963 while mount Puy de Dôme was being drilled, another spring was discovered, the Clairvic, and it is from here that Volvic water still flows today. In 1969, the classic glass bottle was replaced by a container in PVC, one of the first examples of plastic bottles to be used in Europe to bottle spring water. In 1984 the Perrier group bought the Sellier-Leblanc company, owner of Société des Eaux de Volvic, the latter was then sold to the Danone group in 1992 when the Swiss multinational Nestlé re-purchased Perrier and was forced, for anti-monopoly reasons, to give up some brands in the mineral water sector. In 1997, Volvic became the first food and beverage company to launch recyclable PET bottles on the market and today, thanks also to the packaging in 0.5L, 1L and 8L formats, it is the main industry of the sector in France. The company is always in pole position with its eco-sustainable commitment, which can be seen by the attention that it pays to the special “packaging” used to sell its products.

